

**REMARKS**

Claims 1 – 13 and 16 – 22, and 24 - 37 are pending. The Applicants' attorney has amended claims 1, 2, 4 - 8, 12, 19, 27, and 30 - 31 and has cancelled claim 23 without prejudice or disclaimer. As discussed below, the application is condition for allowance.

**Rejection of Claims 1-3 Under 35 U.S.C. § 102(b) In View of U.S. Patent 5,495,156 to Wilson et al.**

As discussed below, the Applicants' attorney respectfully disagrees with this rejection.

**Claims 1 – 3 and 32 – 33**

Claim 1 as amended recites a drive circuit operable to drive a coil with a drive signal during drive periods, and to uncouple the drive signal from the coil during measurement periods that alternate with and are separate from the drive periods.

For example, referring, to FIGS. 3 and 4 of the patent application and the corresponding written description thereof, a drive circuit 36 drives a coil 56 with a drive signal during drive periods T1, and the amplifiers 52 and 54, which are part of the drive circuit 36, uncouple the drive signal from the coil 56 during a period T2 + T3. The latter periods alternate with and are separate from, *i.e.*, does not overlap, the periods T1.

Conversely, referring, *e.g.*, to Wilson's FIG. 2, column 5, line 26 to column 6, line 32, Wilson's drive circuit 10 does not uncouple the drive signal from the coil during measurement periods that alternate with and are separate from the drive periods. Specifically, the amplifier 18 uncouples the drive signal from the coil (actuator 20) at the beginning of a head park procedure so that the coil current can decay to zero. When the coil current is zero, the differential amplifier 22 measures the back emf (Kew) of the coil and in response generates a voltage V1, from which the circuit 10 generates a signal V3 for driving the coil during the park procedure. But unlike the claimed drive circuit, which uncouples the drive signal from the coil during multiple measurement

periods, Wilson's drive circuit 10 uncouples the drive signal from the coil only once at the beginning of the park procedure.

**Rejection of Claims 4 – 13 and 16 – 37 Under 35 U.S.C. § 103(a) As Being Unpatentable Over Wilson In View of U.S. Patent 6,154,340 to Cameron**

As discussed below, the Applicants' attorney respectfully disagrees with this rejection.

**Claims 4 – 7**

Claim 4 as amended recites a drive circuit operable to drive a coil during drive periods, and to uncouple the drive signal from the coil during measurement periods that alternate with and are separate from the drive periods.

As discussed above in support of the patentability of claim 1, Wilson neither teaches nor suggests uncoupling the drive signal from the coil during measurement periods that alternate with and are separate from the drive periods.

Furthermore, Cameron does not teach or suggest that one modify Wilson's drive circuit 10 to measure the back voltage in the coil during multiple periods while parking or unparking a head. Specifically, referring to column 4, lines 26-67, Cameron states that a Wilson-type circuit that measures head velocity when the coil current is zero has problems that make it undesirable for use in parking or unparking a head. Consequently, not only does Cameron fail to motivate one to modify Wilson's circuit to measure the coil back voltage during multiple periods, it teaches away from using Wilson's circuit at all.

**Claims 8 – 11 and 34 – 35**

Claim 8 as amended recites a speed-sense circuit operable to sense a speed of an arm during measurement periods when substantially zero current flows through the coil.

Conversely, as discussed above in support of the patentability of claim 1, Wilson's drive circuit 10 senses the speed of the arm only once at the beginning of a head park procedure.

Furthermore, as discussed above in support of the patentability of claim 4, not only does Cameron fail to motivate one to modify Wilson's circuit to sense the arm speed during multiple periods, it teaches away from using Wilson's circuit at all.

**Claims 12 – 13, 16 – 22, 24 – 26, and 36**

Claims 12 and 19 as amended are patentable for reasons similar to those discussed above in support of the patentability of claim 8.

**Claims 27 – 29**

Claim 27 as amended recites sampling a back voltage across the coil while the approximately zero current is flowing through the coil and repeating the sampling one or more times.

Therefore, claim 27 is patentable for reasons similar to those recited above in support of the patentability of claim 8.

**Claim 30**

Claim 30 as amended is patentable for reasons similar to those recited above in support of the patentability of claim 8.

**Claims 31 and 37**

Claim 31 as amended is patentable for reasons similar to those recited above in support of the patentability of claim 27.

**CONCLUSION**

In light of the foregoing, claims 3, 9-11, 13, 16-18, 20-22, 24-26, 28-29, and 32-37 as previously pending and claims 1, 2, 4 - 8, 12, 19, 27, and 30-31 as amended are in condition for allowance, and that action is requested.

In the event additional fees are due as a result of this amendment, please charge such payment to Deposit Account No. 07-1897.

If the Examiner believes that a phone interview would be helpful, he is respectfully requested to contact the Applicants' attorney, Bryan Santarelli, at (425) 455-5575.

DATED this 19th day of February, 2004.

Respectfully submitted,

GRAYBEAL JACKSON HALEY LLP



Bryan A. Santarelli  
Attorney for Applicant  
Registration No. 37,560  
155-108th Avenue N.E., Ste 350  
Bellevue, WA 98004-5973  
(425) 455-5575